

Breast Cancer Screening

Description:

Percentage of women 50-74 years of age who had a mammogram to screen for breast cancer.

Rationale for Measure Selection / Reference:

Breast cancer is the second most common type of cancer among American women, with approximately 178,000 new cases reported each year (American Cancer Society [ACS], 2007). It is most common in women over 50. Women whose breast cancer is detected early have more treatment choices and better chances for survival. Mammography screening has been shown to reduce mortality by 20 to 30 percent among women 40 and older. A mammogram can reveal tumors too small to be felt by hand; it can also show other changes in the breast that may suggest cancer

The U.S. Preventive Services Task Force (USPSTF), the American Academy of Family Physicians (AAFP), and the American College of Preventive Medicine recommend mammograms as the most effective method for detecting breast cancer when it is most treatable (USPSTF, 2002; "AAFP periodic," 2005; Ferrini et al., 1996). When high-quality equipment is used and well-trained radiologists read the x-rays, 85 to 90 percent of cancers are detectable.

Colorectal Cancer Screening

Description:

Percentage of adults 50-75 years of age who had appropriate screening for colorectal cancer (Measurement period: January 1, 2018 - December 31, 2018).

Rationale for Measure Selection / Reference:

An estimated 132,700 men and women were diagnosed with colon or rectal cancer in 2015. In the same year, 49,700 were estimated to have died from the disease, making colorectal cancer the third leading cause of cancer death in the United States (National Cancer Institute 2015, American Cancer Society 2015).

Screening for colorectal cancer is extremely important as there are no signs or symptoms of the cancer in the early stages. If the disease is caught in its earliest stages, it has a five-year survival rate of 90%; however, the disease is often not caught this early. While screening is extremely effective in detecting colorectal cancer, it remains underutilized (American Cancer Society 2015).

Controlling High Blood Pressure

Description:

Percentage of patients 18 - 85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (< 140/90 mmHg) during the measurement period.

Rationale for Measure Selection / Reference:

Hypertension, or high blood pressure, is a very common and dangerous condition that increases risk for heart disease and stroke, two of the leading causes of death for Americans (Farley et al., 2010). Compared with other dietary, lifestyle, and metabolic risk factors, high blood pressure is the leading cause of death in women and the second-leading cause of death in men, behind smoking (Danaei et al., 2011). Approximately 1 in 3 U.S. adults, or about 70 million people, have high blood pressure but only about half (52%) of these people have their high blood pressure under control. Additionally, data from NHANES 2011 to 2012 found that 17.2% of U.S. adults are not aware they have hypertension (Nwankwo et al., 2013). Projections show that by 2030, approximately 41.4% of US adults will have hypertension, an increase of 8.4% from 2012 estimates (Heidenreich et al., 2011).

The estimated direct and indirect cost of high blood pressure for 2011 is \$46.4 billion. This total includes direct costs such as the cost of physicians and other health professionals, hospital services, prescribed medications and home health care, as well as indirect costs due to loss of productivity from premature mortality (Mozaffarian et al., 2015). Projections show that by 2030, the total cost of high blood pressure could increase to an estimated \$274 billion (Heidenreich et al., 2011).

Better control of blood pressure has been shown to significantly reduce the probability that undesirable and costly outcomes will occur. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40%), myocardial infarction (20-25%) and heart failure (>50%) (Chobanian et al., 2003). Thus, the relationship between the measure (control of hypertension) and the long-term clinical outcomes listed is well established.

Depression Remission at Twelve Months

Description:

Patients age 18 and older with major depression or dysthymia and an initial Patient Health Questionnaire (PHQ-9) score greater than nine who demonstrate remission at twelve months (+/- 30 days after an index visit) defined as a PHQ-9 score less than five. This measure applies to both patients with newly diagnosed and existing depression whose current PHQ-9 score indicates a need for treatment.

Rationale for Measure Selection / Reference:

The Centers for Disease Control and Prevention states that nationally 15.7% of people report being told by a health care professional that they had depression at some point in their lifetime. Persons with a current diagnosis of depression and a lifetime diagnosis of depression or anxiety were significantly more likely than persons without these conditions to have cardiovascular disease, diabetes, asthma and obesity and to be a current smoker, to be physically inactive and to drink heavily. According to National Institute of Mental Health (NIMH), 6.7 percent of the U.S. population ages 18 and older (14.8 million people) in any given year have a diagnosis of a major depressive disorder. Major depression is the leading cause of disability in the U.S. for ages 15 - 44. Additionally, dysthymia accounts for an additional 3.3 million Americans.

Diabetes: Eye Exam

Description:

Percentage of patients 18 - 75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period.

Rationale for Measure Selection / Reference:

As the seventh leading cause of death in the U.S., diabetes kills approximately 75,000 people a year (CDC FastStats 2015). Diabetes is a group of diseases marked by high blood glucose levels, resulting from the body's inability to produce or use insulin (CDC Statistics 2014, ADA Basics 2013). People with diabetes are at increased risk of serious health complications including vision loss, heart disease, stroke, kidney failure, amputation of toes, feet or legs, and premature death. (CDC Fact Sheet 2014).

In 2012, diabetes cost the U.S. an estimated \$245 billion: \$176 billion in direct medical costs and \$69 billion in reduced productivity. This is a 41 percent increase from the estimated \$174 billion spent on diabetes in 2007 (ADA Economic 2013).

In 2005-2008, of adults with diabetes aged 40 years or older, 4.2 million (28.5%) people had diabetic retinopathy, damage to the small blood vessels in the retina that may result in loss of vision. (CDC Statistics, 2014).

Diabetes Mellitus: Hemoglobin A1c Poor Control

Description:

Percentage of patients 18-75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period (Jan 1, 2018 - Dec. 31, 2018)

Rationale for Measure Selection / Reference:

Diabetes mellitus (diabetes) is a group of diseases characterized by high blood glucose levels caused by the body's inability to correctly produce or utilize the hormone insulin. It is recognized as a leading cause of death and disability in the U.S. and is highly underreported as a cause of death. Diabetes may cause life-threatening, life-ending or life-altering complications, including poor circulation, nerve damage or neuropathy in the feet and eventual amputation. Nearly 60-70 percent of diabetics suffer from mild or severe nervous system damage (American Diabetes Association 2009).

Randomized clinical trials have demonstrated that improved glycemic control, as evidenced by reduced levels of glycohemoglobin, correlates with a reduction in the development of microvascular complications in both Type 1 and Type 2 diabetes (Diabetes Control and Complications Trial Research Group 1993; Ohkubo 1995). In particular, the Diabetes Control and Complications Trial (DCCT) showed that for patients with Type 1 diabetes mellitus, important clinical outcomes such as retinopathy (an important precursor to blindness), nephropathy (which precedes renal failure), and neuropathy (a significant cause of foot ulcers and amputation in patients with diabetes) are directly related to level of glycemic control (Diabetes Control and Complications Trial Research Group 1993). Similar reductions in complications were noted in a smaller study of intensive therapy of patients with Type 2 diabetes by Ohkubo and co-workers, which was conducted in the Japanese population (Ohkubo et al. 1995).

Falls: Screening for Future Fall Risk

Description:

Percentage of patients 65 years of age and older who were screened for future fall risk during the measurement period.

Rationale for Measure Selection / Reference:

As the leading cause of both fatal and nonfatal injuries for older adults, falls are one of the most common and significant health issues facing people aged 65 years or older (Schneider, Shubert and Harmon 2010).

Moreover, the rate of falls increases with age (Dykes et al. 2010). Older adults are five times more likely to be hospitalized for fall-related injuries than any other cause-related injury. It is estimated that one in every three adults over 65 will fall each year (Centers for Disease Control and Prevention 2015). In those over age 80, the rate of falls increases to fifty percent (Doherty et al. 2009). Falls are also associated with substantial cost and resource use, approaching \$30,000 per fall hospitalization (Woolcott et al. 2011). Identifying at-risk patients is the most important part of management, as applying preventive measures in this vulnerable population can have a profound effect on public health (al-Aama 2011). Family physicians have a pivotal role in screening older patients for risk of falls, and applying preventive strategies for patients at risk (al-Aama 2011).

Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antiplatelet

Description:

Percentage of patients 18 years of age and older who were diagnosed with acute myocardial infarction (AMI), coronary artery bypass graft (CABG) or percutaneous coronary interventions (PCI) in the 12 months prior to the measurement period, or who had an active diagnosis of ischemic vascular disease (IVD) during the measurement period, and who had documentation of use of aspirin or another antiplatelet during the measurement period.

Rationale for Measure Selection / Reference:

Cardiovascular disease, including stroke, is the leading cause of death in the United States. More than 85 million American adults have one or more types of cardiovascular disease. Specifically, more than 15 million adults (20 years and older) have coronary heart disease (CHD), over 8 million adults have angina, more than 7 million adults have had a myocardial infarction (MI), over 6 million adults have had a stroke, and nearly 7 million adults 40 years of age and older have peripheral artery disease (Mozaffarian et al., 2015). It is estimated that by 2030 more than 43 percent of Americans will have a form of cardiovascular disease (Heidenreich et al., 2011).

In 2011, the total cost of cardiovascular disease and stroke in the United States was estimated to be \$320 billion. This total includes direct costs such as the cost of physicians and other health professionals, hospital services, prescribed medications and home health care, as well as indirect costs due to loss of productivity from premature mortality (Mozaffarian et al., 2015). By 2030, direct medical costs for cardiovascular disease are projected to increase to nearly \$918 billion (Heidenreich, 2011).

Antiplatelet medications, such as aspirin and clopidogrel, are drugs that inhibit platelets from clumping together and forming clots. Their use in the secondary prevention of cardiovascular events is well established. In patients who are at high risk because they already have occlusive cardiovascular disease, long-term antiplatelet therapy reduces the yearly risk of serious vascular events (MI, stroke, death) by about twenty-five percent (Antiplatelet Trialists' Collaboration, 1994; 2002; 2009). A more recent systematic review of the literature confirmed the benefits of antiplatelet therapy in reducing death from cardiovascular causes, MI, or stroke (Cheng, 2013). Antiplatelet agents also have a beneficial effect in reducing all-cause mortality and fatal cardiovascular events in patients with peripheral arterial disease (Wong et al., 2011).

Medication Reconciliation Post-Discharge

Description:

The percentage of discharges from any inpatient facility (e.g. hospital, skilled nursing facility, or rehabilitation facility) for patients 18 years and older of age seen within 30 days following discharge in the office by the physician, prescribing practitioner, registered nurse, or clinical pharmacist providing on-going care for whom the discharge medication list was reconciled with the current medication list in the outpatient medical record

Rationale for Measure Selection / Reference:

Medications are often changed while a patient is hospitalized. Continuity between inpatient and on-going care is essential.

Pneumonia Vaccination Status for Older Adults

Description:

Percentage of patients 65 years of age and older who have ever received a pneumococcal vaccine.

Rationale for Measure Selection / Reference:

Pneumonia is a common cause of illness and death in the elderly and persons with certain underlying conditions such as heart failure, diabetes, cystic fibrosis, asthma, sickle cell anemia, or chronic obstructive pulmonary disease. (NHLBI, 2011) In 1998, an estimated 3,400 adults aged > 65 years died as a result of invasive pneumococcal disease. (IPD) (CDC, 2003).

Among the 91.5 million US adults aged > 50 years, 29,500 cases of IPD, 502,600 cases of nonbacteremic pneumococcal pneumonia and 25,400 pneumococcal-related deaths are estimated to occur yearly; annual direct and indirect costs are estimated to total \$3.7 billion and \$1.8 billion, respectively. Pneumococcal disease remains a substantial burden among older US adults, despite increased coverage with 23-valent pneumococcal polysaccharide vaccine, (PPV23) and indirect benefits afforded by PCV7 vaccination of young children. (Weycker, et al., 2011).

Vaccination has been found to be effective against bacteremic cases (OR: 0.34; 95% CI: 0.27–0.66) as well as nonbacteremic cases (OR: 0.58; 95% CI: 0.39–0.86). Vaccine effectiveness was highest against bacteremic infections caused by vaccine types (OR: 0.24; 95% CI: 0.09–0.66). (Vila-Corcoles, et al., 2009)

Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up

Description:

Percentage of patients aged 18 years and older with a BMI documented during the current encounter or during the previous six months AND with a BMI outside of normal parameters, a follow-up plan is documented during the encounter or during the previous six months of the current encounter.

Rationale for Measure Selection / Reference:

Obesity continues to be a costly public health concern in the United States. This is because obesity is associated with several comorbid health problems including increased risk for coronary artery disease, type 2 diabetes, various types of cancer, gallstones and disability. These comorbid conditions are associated with higher medical care utilization and costs among obese patients (Moyer, 2012, p. 373). Padula, Allen & Nair (2014) examined data from a commercial claims and encounter database to estimate the cost for obesity and associated comorbidities between 2006-2007 and found that on the average, obesity contributed to \$1907 more in cost per patient per visit for inpatient and outpatient claims, while the increase in cost for comorbidities ranged from \$527 for obesity with congestive heart failure (CHF) to \$15,733 for the combination of obesity, diabetes mellitus, hypertension and depression. Similarly, data from 2006 show that per capita annual medical spending costs attributable to obesity are higher by \$1,429 (42 percent) when compared to per capita costs attributable to normal weight patients. The national aggregate cost for obesity related costs (across all payers) was estimated to be equivalent to \$147 billion using 2008 dollars (Finkelstein, Trogon, Cohen & Dietz, 2009). Obesity is also associated with an increased risk of death, particularly in adults younger than age 65 years and has been shown to reduce life expectancy by 6 to 20 years depending on age and race (LeBlanc et al., 2011; Masters et al., 2013).

Against this background of high obesity related costs, CDC 2009 data showed that all states were still lagging behind the Healthy People 2010 obesity target of 15 percent and that the self-reported overall prevalence of obesity among adults had increased 1.1 percentage points in 2007 to 26.7 percent (2010). Most recent data shows that the prevalence of BMI-defined obesity in adults continues to exceed 30% (34.9 overall) and highest among middle-aged adults (34.9). The findings also revealed the prevalence of obesity being higher among black adult women (56.6%) compared with 37.1% of black adult men (Ogden, Carroll, Kit and Flegel, 2013). Despite the high obesity prevalence, and related costs, less than 50% of obese adults in 2010 received advice to exercise or perform physical activity (Barnes & Schoenborn, 2012) indicating a gap in care for a high impact disease condition.

Screening for BMI and follow-up therefore is critical to closing this gap and contributes to quality goals of population health and cost reduction. However, due to concerns for other underlying conditions (such as bone health) or nutrition related deficiencies providers are cautioned to use clinical judgment and take these into account when considering weight management programs for overweight patients, especially the elderly (NHLBI Obesity Education Initiative, 1998, p. 91).

Preventive Care and Screening: Influenza Immunization

Description:

Percentage of patients aged 6 months and older seen for a visit between October 1 and March 31 who received an influenza immunization OR who reported previous receipt of an influenza immunization

Rationale for Measure Selection / Reference:

Annual influenza vaccination is the most effective method for preventing influenza virus infection and its complications. Influenza vaccine is recommended for all persons aged ≥ 6 months who do not have contraindications to vaccination.

Vaccination has been found to be effective against bacteremic cases (OR: 0.34; 95% CI: 0.27–0.66) as well as nonbacteremic cases (OR: 0.58; 95% CI: 0.39–0.86). Vaccine effectiveness was highest against bacteremic infections caused by vaccine types (OR: 0.24; 95% CI: 0.09–0.66). (Vila-Corcoles, et al., 2009).

Preventive Care and Screening: Screening for Clinical Depression and Follow-up Plan

Description:

Percentage of patients aged 12 years and older screened for depression on the date of the encounter using an age appropriate standardized depression screening tool AND if positive, a follow-up plan is documented on the date of the positive screen.

Rationale for Measure Selection / Reference:

In 2008, the Geriatric Mental Foundation reported that of the population aged 65 and older in the United States, 15-20 percent of adults had experienced depression (Geriatric Mental Health Foundation, 2008), while 7 million of the same population were affected by depression (Steinman, 2007, p. 175) and accounted for 16 percent of suicide deaths in 2004 (Centers for Disease Control and Prevention, 2007).

The World Health Organization (WHO), as cited by Pratt & Brody (2008), found that major depression was the leading cause of disability worldwide. "Overall, approximately 80% of persons with depression reported some level of difficulty in functioning because of their depressive symptoms. In addition, 35% of males and 22% of females with depression reported that their depressive symptoms make it very or extremely difficult for them to work, get things done at home, or get along with other people. More than one-half of all persons with mild depressive symptoms also reported some difficulty in daily functioning attributable to their symptoms" (Pratt & Brody, 2008, p.2). Pratt & Brody (2008) found that depression rates were higher in the 40-59 age brackets, is more common in females than in males, and higher in non-Hispanic black persons than in their non-Hispanic white counterparts (Pratt & Brody, 2008, p. 2). Disparities due to income have also been observed, as those with lower income (below the federal poverty line) in the 18-39 and 40-59 age brackets, whom experience higher depression rates than those with higher income. This disparity is not observable in other age categories (Pratt & Brody, 2008, p. 2).

Among children, the rate of current or recent depression stands at 3% and at 6% for adolescents, whose lifetime incidence rate of major depressive disorder (MDD) could be as high as 20% (Williams et al., 2009, p. e716). Borner (2010), states that 20% of adolescents are likely to have experienced depression by the time they are 18 years old and that there is an observed increased onset around puberty. Onset of MDD during adolescence is particularly significant because it is associated with higher risks of suicide attempt, death by suicide and MDD recurrence in young adulthood. Additionally MDD is "associated with early pregnancy, decreased school performance, and impaired work, social, and family functioning during young adulthood" (Williams et al., 2009, p. e716). According to Zalsman et al., (2006) as reported

in Borner et al. (2010), "depression ranks among the most commonly reported mental health problems in adolescent girls" (p. 947).

"The negative outcomes associated with early onset depression, make it crucial to identify and treat depression in its early stages" (Borner, 2010, p. 948). While Primary Care Providers (PCPs) serve as the first line of defense in the detection of depression, studies show that PCPs fail to recognize up to 50% of depressed patients, purportedly because of time constraints and a lack of brief, sensitive, easy-to-administer psychiatric screening instruments" (Borner, 2010, p. 948). "Coyle et al. (2003), suggested that the picture is more grim for adolescents, and that more than 70% of children and adolescents suffering from serious mood disorders go unrecognized or inadequately treated" (Borner, 2010, p. 948). The substantial economic burden of depression for individuals and society alike makes a case for screening for depression on a regular basis. This measure seeks to achieve this goal and aligns with the Healthy People 2020 recommendation for routine screening for mental health problems as a part of primary care for both children and adults (U.S. Department of Health and Human Services, 2014). The measure makes important contribution to the quality domain of community and population health.

Tobacco Use

Description:

Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.

Rationale for Measure Selection / Reference:

This measure is intended to promote adult tobacco screening and tobacco cessation interventions for those who use tobacco products. There is good evidence that tobacco screening and brief cessation intervention (including counseling and/or pharmacotherapy) is successful in helping tobacco users quit. Tobacco users who are able to stop smoking lower their risk for heart disease, lung disease, and stroke.

Statin Therapy for the Prevention and Treatment of Cardiovascular Disease

Description:

Percentage of the following patients—all considered at high risk of cardiovascular events—who were prescribed or were on statin therapy during the measurement period:

- Adults aged ≥ 21 years who were previously diagnosed with or currently have an active diagnosis of clinical atherosclerotic cardiovascular disease (ASCVD); OR
- Adults aged ≥ 21 years who have ever had a fasting or direct low-density lipoprotein cholesterol (LDL-C) level ≥ 190 mg/dL or were previously diagnosed with or currently have an active diagnosis of familial or pure hypercholesterolemia; OR
- Adults aged 40-75 years with a diagnosis of diabetes with a fasting or direct LDL-C level of 70-189 mg/dL

Rationale for Measure Selection / Reference:

“Cardiovascular disease (CVD) is the leading cause of death in the United States, causing approximately 1 of every 7 deaths in the United States in 2011. In 2011, stroke caused approximately 1 of every 20 deaths in the United States. For 2011, the estimated annual costs for CVD and stroke were \$320.1 billion, including \$195.6 billion in direct costs (hospital services, physicians and other professionals, prescribed medications, home health care, and other medical durables) and \$124.5 billion in indirect costs from lost future productivity (cardiovascular and stroke premature deaths). CVD costs more than any other diagnostic group.” (Mozaffarian et al., 2015)

Data collected between 2009 and 2012 indicates that more than 100 million US adults, 20 years or older, had total cholesterol levels equal to 200 mg/dL or more, while almost 31 million had levels 240 mg/dL or more. (Mozaffarian et al., 2015) Elevated blood cholesterol is a major risk factor for CVD and statin therapy has been associated with a reduced risk of CVD. Numerous randomized trials have demonstrated that treatment with a statin reduces LDL-C, and reduces the risk of major cardiovascular events by approximately 20 percent. (Ference, 2015)

In 2013, guidelines on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults were published. (See Stone et al., 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: a Report of the American College of Cardiology [ACC]/American Heart Association [AHA] Task Force on Practice Guidelines) This guideline

was published by an Expert Panel, which synthesized evidence from randomized controlled trials to identify people most likely to benefit from cholesterol-lowering therapy. The ACC/AHA Guideline recommendations are intended to provide a strong evidence-based foundation for the treatment of blood cholesterol for the primary and secondary prevention and treatment of Atherosclerotic Cardiovascular Disease(ASCVD) in adult men and women (21 years of age or older). The document concludes the addition of statin therapy reduces the risk of ASCVD among high-risk individuals, defined as follows: individuals with clinical ASCVD, with LDL-C \geq 190 mg/dL, or with diabetes and LDL-C 70-189 mg/dL. (Stone et al., 2013).

However, one study that surveyed U.S. cardiovascular practices participating in the PINNACLE registry, found that 32.4 percent of patients with an indication for statins under the 2013 ACC/AHA cholesterol guidelines were not currently receiving them. (Maddox et al., 2014) Although systematic evidence review found that statins are safe drugs with low incidence of conditions or diseases attributable to statin use. (Law et al., 2006) Overall, the Statin Safety Expert Panel that participated in an NLA Statin Safety Task Force meeting in October 2013 reaffirms the general safety of statin therapy. The panel members concluded that for most patients requiring statin therapy, the potential benefits of statin therapy outweigh the potential risks. In general terms, the benefits of statins to prevent non-fatal myocardial infarction, revascularization, stroke, and CVD mortality, far outweighs any potential harm related to the drug. (Jacobson, 2014)